AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the above-captioned patent application:

Listing of Claims:

1-36 (Cancelled)

37. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where the entire solution leaving the absorber is passed through the FGR.

38. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve

overall burner efficiency, in which a fraction of the solution leaving the absorber is passed through the FGR.

39. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, a high temperature heat exchangers, a low temperature hat exchanger, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, in which the stream of weak solution leaving ~~H2~~ said low temperature heat exchanger is split with a fraction of said solution being heated in the FGR.

40. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, a low stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator

(FGR) to improve overall burner efficiency, in which part of the solution entering ~~G2~~ said low stage generator is bypassed to the FGR.

41. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency and where all of the weak solution that is circulated in the absorption cycle is passed through the FGR before entering in low temperature heat exchanger to exchange heat with exhaust gas leaving high stage generator section to eliminate the danger of crystallization of strong solution in the low temperature heat exchanger.

42. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, high temperature heat exchangers, a low temperature heat exchanger and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections

of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where a fraction of weak solution that is circulated in the absorption cycle is passed through the FGR to exchange heat with exhaust gas leaving the high stage generator section.

43. (Currently Amended) The system of claim 42 in which solution leaving the FGR is mixed with heated weak solution leaving ~~the~~ said high temperature heat exchanger.

44. (Previously Presented) The system of claim 43 in which the fraction of solution passing through the FGR is such that temperature of solution leaving FGR is =/-10 degree C when comparted to temperature of heated weak solution leaving the high temperature exchanger.

45. (Currently Amended) The system of claim 42 in which solution leaving the FGR is mixed with heated weak solution leaving ~~the~~ said low temperature heat exchanger.

46. (Previously Presented) The system of claim 45 in which the fraction of solution passing through the FGR is such that the temperature of solution leaving the FGR is +/-5 degree C when compared to temperature of heated weak solution leaving low temperature heat exchanger.

47. (Previously Presented) The system in claim 44 in which the fraction of solution flow entering the FGR is determined by use of an orifice.

48. (Previously Presented) The system in claim 44 in which the fraction of solution flow entering the FGR is determined by use of a mechanical valve.

49. (Previously Presented) The system in claim 44 in which the fraction of solution flow entering the FGR is determined by use of an electronically controlled valve.

50. (Currently Amended) The system in claim 46 in which the fraction of solution flow entering the FGR is determined by use of ~~a mechanical valve~~ an orifice.

51. (Previously Presented) The system in claim 46 in which the fraction of solution flow entering the FGR is determined by use of a mechanical valve.

52. (Previously Presented) The system in claim 46 in which the fraction of solution flow entering the FGR is determined by use of an electronically controlled valve.

53. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage

generator, absorber, condenser, high and low temperature heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where a fraction of the stream of the weak solution leaving the low temperature heat exchanger is passed through the FGR to exchange heat with exhaust gas leaving the high stage generator section.

54. (Previously Presented) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, absorber, condenser, high and low temperature heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency, and where the fraction of solution passing through the FGR is such that the temperature of the solution leaving the FGR is +/-5 degree C when compared to the temperature of the heated weak solution leaving the high temperature heat exchanger.

55. (Currently Amended) In an absorption cooling system of the type which uses a refrigerant and an absorbent solution and which includes a high stage generator, a low stage generator, absorber, condenser, high and low temperature heat exchangers, and an evaporator and means for connecting said components to one another to form a closed absorption cooling system with said solution side of said high stage generator being fluidically divided with a partition plate into two sections of substantially identical construction whereby gas exiting one section at relatively high temperature is further cooled in the second section which functions as a flue gas recuperator (FGR) to improve overall burner efficiency and where a fraction of the solution entering ~~the~~ said low stage generator is bypassed to exchange heat in the FGR to produce refrigerant vapor.

56. (Previously Presented) The system in claim 55 in which the fraction of the solution entering FGR is such that concentration of solution leaving FGR is equal to concentration of solution leaving low stage generator.

57. (Previously Presented) The system in claim 55 in which the fraction of solution entering the FGR is such that the absorbent concentration of solution leaving the FGR is within +/0.5 percent absolute when compared to the absorbent concentration of solution leaving the low stage generator.

58. (Previously Presented) The system of claim 55 in which the vapor portion of the FGR and vapor portion of the low stage generator are fluidically connected to operate at a pressure difference not exceeding 0.2 torr.